

What is claimed is:

1 1. A solder joint configuration at and near an
2 intermetallic layer that disrupts, constrains, or lengthens
3 cracking at said intermetallic boundary, thereby increasing
4 fatigue life of the solder joint, comprises a pad having an
5 irregular boundary layer.

1 2. Configuration at an intermetallic boundary that
2 disrupts, constrains, or lengthens cracking at said
3 intermetallic boundary, thereby increasing fatigue life of
4 the solder joint, comprises a solder strip having a
5 serpentine boundary layer.

1 3. A solder joint configuration at an intermetallic
2 boundary that disrupts, constrains, or lengthens cracking at
3 said intermetallic boundary, thereby increasing fatigue life
4 of the solder joint, comprises a pad having an
5 interdigitated boundary layer.

1 4. A solder joint configuration at an intermetallic
2 boundary that disrupts, constrains, or lengthens cracking at
3 said intermetallic boundary, thereby increasing fatigue life
4 of the solder joint, comprising a pad having a curved
5 boundary layer.

1 5. A solder joint configuration at an intermetallic
2 boundary in accordance with claim 4, wherein said curved
3 boundary layer further comprises a substantially continuous
4 structure.

1 6. A method of soldering that disrupts, constrains, or
2 lengthens cracking at an intermetallic boundary, whereby
3 fatigue life of a solder joint is increased, comprising the
4 steps of:

- 5 a) placing solder at a pad; and
- 6 b) configuring said solder to provide an
- 7 irregular boundary layer during bonding at
- 8 said pad in order to increase fatigue life of
- 9 said solder joint.

1 7. A method of soldering that disrupts, constrains, or
2 lengthens cracking at an intermetallic boundary, whereby
3 fatigue life of a solder joint is increased, comprising the
4 steps of:

5 a) placing solder at a pad; and

6 b) configuring said solder to provide a
7 serpentine boundary layer during bonding at
8 said pad in order to increase fatigue life of
9 said solder joint.

1 8. A method of soldering that disrupts, constrains, or
2 lengthens cracking at an intermetallic boundary, whereby
3 fatigue life of a solder joint is increased, comprising the
4 steps of:

5 a) placing solder at a pad; and

6 b) configuring said solder to
7 provide a digitated boundary layer
8 during bonding at said pad in order to
9 increase fatigue life of said solder joint.